



Taylor Diagram Software Tutorial

The [Taylor diagram](#) is a polar coordinate chart that links the angular position with the inverse cosine of the correlation coefficient, R . In this diagram, a correlation coefficient of 0 is depicted as being at 90° , while a correlation coefficient of 1 is at 0° . The distance along the radial axis from the origin corresponds to the normalized standard deviation, represented as σ_M . The reference point is established by employing statistics derived from a comparison of the reference dataset with itself (as defined in the formula for normalized standard deviation). In the context of the Normalized Taylor Diagram, this reference point is depicted in polar coordinates as $(1.0, 0.0)$. However, when employing the Classic Taylor Diagram, it is represented as $(\sigma_o, 0.0)$, with σ_o denoting the standard deviation of the observation data.

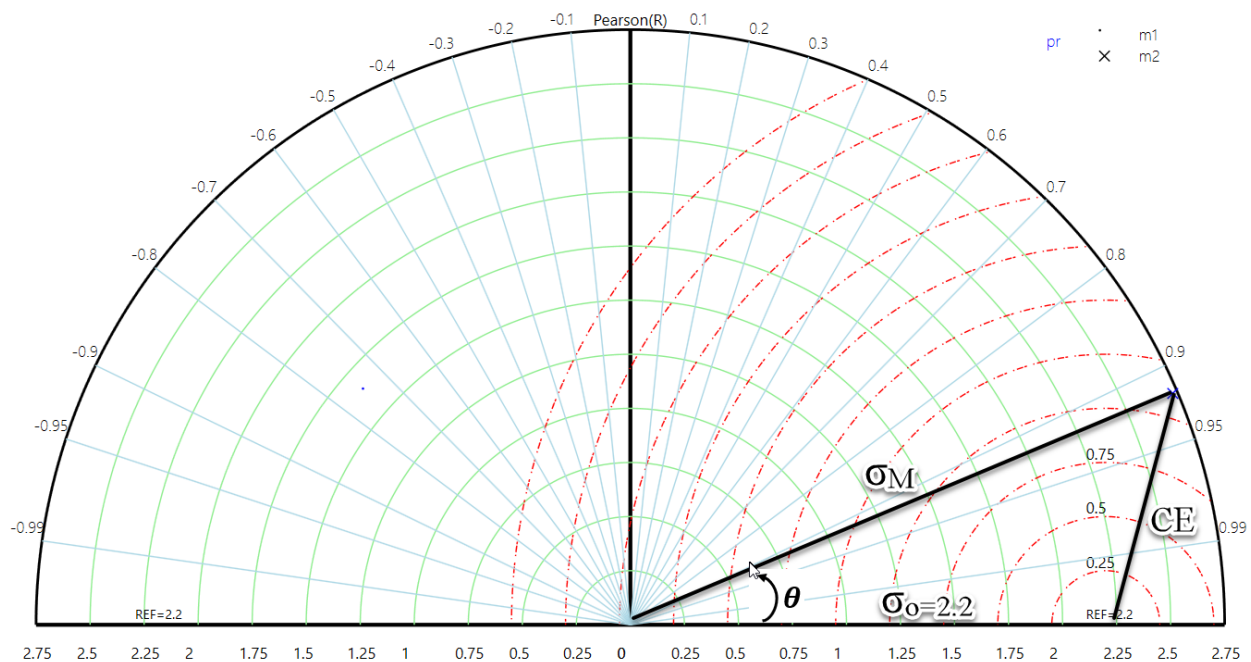
To describe the diagram below:

In this diagram:

- The green circles indicate the standard deviation of the model(σ_M).
- The red circles represent the centered Root Mean Square Error (CE).
- The black circle axis corresponds to the Pearson correlation coefficient (R).
- The REF point on the horizontal axis corresponds to the standard deviation of the observation(σ_o).



It's important to note that if the R-value is positive, the data point will be positioned in the right quarter circle. Conversely, if the R-value is negative, the data point will be situated in the left quarter circle.



▪ Buy a license and Installing

The installation procedure for this tool is straightforward and trouble-free. Once you've obtained a license, you'll gain access to a tool called "ID Finder." Share your unique ID with us, and in response, you'll receive the installer for the registered version. Running the installer will seamlessly install the tool without needing an additional activation key. Once installed, you can effortlessly access the device by clicking on the desktop shortcut or running "Taylor Diagram Software" in your computer's program list.



How to Use it

First, you have two options to input data into the Taylor Diagram Software:

1. Input Ratio and Correlation Values:

- Calculate the standard deviation of the observation and each model.
- Compute the Pearson correlation between each model and the observation data.
- The Ratio is obtained by dividing the standard deviation of the model by the standard deviation of the observation (σ_M/σ_O).

2. Input Raw Data:

- The tool will automatically calculate all necessary parameters.
- We'll guide you on how to utilize raw data to create the Taylor Diagram.

Additionally, in the midst of this process, we'll explain how to use option 1 if needed.

Input Data Tab

When you initiate the tool, you'll encounter a window similar to the one depicted in the figure below. Here are the steps to follow:



1. Enter the name of the variable you're working with and select your preferred color for that variable.
2. If you're inputting the first variable, provide a list of models. This list will be used for both the first variable and any subsequent variables.
3. In the model's list, specify the Marker Type (choose from ten available shapes) and Marker Size.
4. If you intend to input data as per option 1, you should enter the Ratio and Pearson correlation values. However, if you prefer to use option 2, simply input zero for these values, and the tool will automatically populate them with zeros.
5. If you wish to input raw data, please tick the "Use Raw Data" checkbox, and on the right-hand side, populate the list with your data.
- 6- You can now save the Var-Model configuration and repeat steps 1-6 if you want to enter another variable.



The screenshot shows the 'Taylor Diagram Software' window. It has two main tabs: 'Input Data' and 'Raw Data'. The 'Input Data' tab is active, showing a 'Variables' section with a text box for 'Name Of Variable' (containing 'PF') and a color selection dropdown (set to red). Below this is a 'Models' table with columns: Name, Marker Type, Marker Size, Ratio Value, and Correlation. The table lists six models (m1 to m6) with various marker types and sizes. Annotations with orange callouts point to specific fields: 'Enter Name of variable' points to the 'Name Of Variable' text box; 'Enter model if this is first variable' points to the 'Name' column in the 'Models' table; 'If you are using raw data enter zero for all Ratio and Corr' points to the 'Ratio Value' and 'Correlation' columns; and 'If you want to use raw data Check this' points to the 'Use Raw Data' checkbox. The 'Raw Data' tab is also visible, showing a 'Data of pr' table with columns m1 through m6 and an 'Observation' column. The 'Data of pr' table contains numerical data for each model across multiple observations.

Name	Marker Type	Marker Size	Ratio Value	Correlation
m1	Triangle	6	0	0
m2	Point	6	0	0
m3	Multiply	6	0	0
m4	Plus	6	0	0
m5	Circle	6	0	0
m6	Star	6	0	0

m1	m2	m3	m4	m5	m6	Observation
7.591308768	45.03783168	28.9374336	39.73245696	8.63529552	25.9868653056	42.9541
13.3498368	69.53688	70.4062368	85.9989312	42.2783712	56.3140512	98.4322
228.6509904	200.32396416	64.03679424	162.03864672	235.65473856	178.141026816	134.092
166.8214656	303.4814688	77.09399424	166.89485376	233.2545632	209.50926912	152.667
156.0187008	224.0921376	74.88936	181.4420736	240.3045792	175.34937024	102.665
32.20829568	98.82519264	57.10857696	98.09452512	20.865727008	61.4204634816	60.997
0.08868959136	35.31845376	26.223196608	60.61915584	12.1606056	26.882020279872	21.6295
0.641188224	94.6588032	45.8027136	67.1141376	59.8083264	53.6050338048	58.3788
83.01191904	109.46031552	49.95537408	135.0409104	272.2272192	129.939147648	115.692
186.66412416	193.28486112	110.78639136	164.19100896	341.1451296	199.21430304	182.643
107.3660832	163.7135712	115.7073984	287.745696	237.54384	182.41531776	120.354
46.45711584	42.800832	45.305136	70.79734368	17.602605504	44.5926066048	27.4685
5.892533568	35.32889952	23.282581248	48.40886592	20.739333312	26.7304427136	49.9924
53.0450208	129.9711744	45.9592704	79.9935264	54.85968	72.7657344	62.8018
213.59248992	228.12977376	73.3212	109.26452448	304.9974432	185.861086272	160.88
172.1916576	142.82487648	145.53863136	206.60722272	327.9593664	199.024350912	191.654

Taylor Diagram Tab

In this tab, you have the option to conveniently choose the line color and line type for STD (Standard Deviation), RMSE (Root Mean Square Error), and Pearson lines.

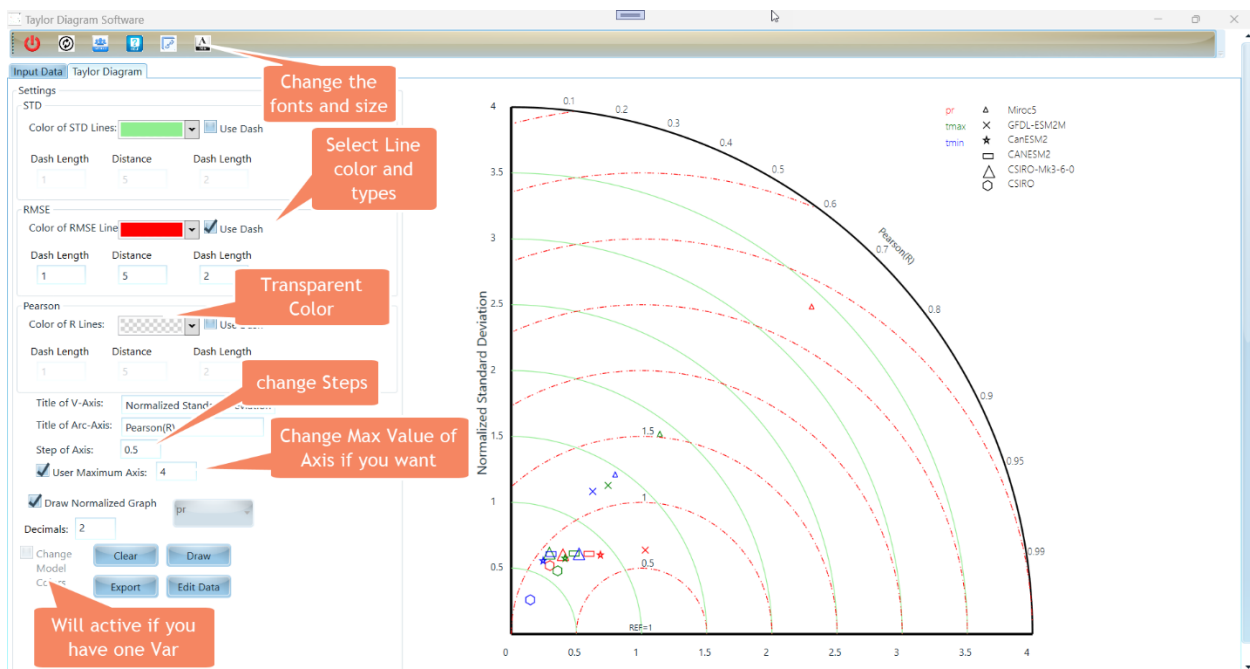
It's worth noting that you can opt for a transparent color for STD and Pearson lines if you prefer not to display these lines. Additionally, when selecting the line type, you can choose three segments for each line, and the tool will automatically replicate this pattern.

The default **value** for the step intervals in the vertical and horizontal axes, as well as for the RMSE circles, are set at 0.25. However, you have the flexibility to



modify these values. This customization can prove to be highly beneficial, particularly when you prefer not to utilize the Normalized Taylor Diagram.

By default, the vertical and horizontal axes extend to the maximum value of your data. However, if you wish to adjust these axes, you can enable the "Use Maximum Axis" checkbox and input your desired value.



If you are working with a single variable and want to assign different colors to each model, you can activate this feature by checking the "Change Model Color" checkbox and specifying the colors for each model. Please note that this option is available when you have only one variable.



You can edit your data by clicking the "Edit Data" button. Remember to save your data and redraw the chart to apply your changes.

If you wish to modify the font family and text size on the axis, you can do so by clicking the corresponding icon in the top bar. This action will open a window that allows you to make the desired adjustments.

You can now create the Taylor Diagram and save it by clicking the "Export" button. We recommend selecting the "Maintain Aspect Ratio" option in the Export window. Additionally, you have the flexibility to adjust the DPI (Dots Per Inch) to your preferred values.

It's important to be aware that if you have negative values for the Pearson correlation of your models, the tool will prompt you in the first tab to multiply them by -1(not recommended). However, if you choose not to do so by clicking "No", the tool will draw the data on a Semicircle Diagram (recommended for negative values) while selecting "Yes" will result in it being drawn on a quarter circle.